Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

05-AMRC-0214

APR 19 2005

Mr. Michael Wilson
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Mr. Wilson:

CERTIFICATION OF CLOSURE FOR THE 1325-N LIQUID WASTE DISPOSAL FACILITY

This letter forwards to your office the Certification of Closure for the 1325-N Liquid Waste Disposal Facility (also known as 116-N-3). Closure activities have been completed and this certification is forwarded as required by Washington Administrative Code (WAC) 173-303-610(6). Included are: Enclosure 1, the Owner/Operator Closure Certification for the 1325-N Liquid Waste Disposal Facility; Enclosure 2, the Independent Registered Professional Engineer's Certification of Closure of the 1325-N (116-N-3) Treatment, Storage, and Disposal Unit; and Enclosure 3, the Independent Registered Engineer's Closure Certification Report for 1325-N (116-N-3). The closure certification was prepared in accordance with WAC 173-303-610(6) and the State of Washington Department of Ecology (Ecology) approved 100-NR-1 Treatment Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39).

Closure activities were initiated in July 2000 pursuant to the closure plan (Attachment 41 of the Hanford Facility Resource Conservation and Recovery Act Permit) that was approved by Ecology in a letter dated July 16, 1998. The activities consisted of excavation and disposal of contaminated soil and debris from the 1325-N Liquid Waste Disposal Facility to the Environmental Restoration Disposal Facility followed by verification sampling of the remaining soils. Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-3 Trench, Crib, and 100-N-63:1 Pipeline (CVP-2002-00002, Rev. 0, and December 2002) documents completion of the remedial action and verifies attainment of the Remedial Action Goals.

The radiologically contaminated groundwater attributed to 1325-N remains above drinking water standards and is addressed through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision for the 100-NR-1/100-NR-2 Operable Unit.

If you have any questions, you may call me or your staff may contact Leif Erickson, Assistant Manager for the River Corridor on (509) 372-7272.

Sincerely,

Keith A. Klein
Manager

AMRC:KRW

Enclosures

cc w/encls:
N. Ceto, EPA
J. D. Fancher, CHI
D. A. Faulk, EPA
S. E. Parnell, CHI
J. Price, Ecology, w/encl (2)

cc w/o encls:
R. L. Donahoe, BHI
J. A. Hedges, Ecology

OWNER/OPERATOR
CLOSURE CERTIFICATION
FOR
1325-N LIQUID WASTE DISPOSAL FACILITY

We, the undersigned, hereby certify that the 1325-N Liquid Waste Disposal Facility (also referred as 116-N-3) closure activities were performed in accordance with the specifications in the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39), approved by the State of Washington Department of Ecology in a letter dated July 16, 1998.

4/18/05

Owner/Operator
K. A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

Date

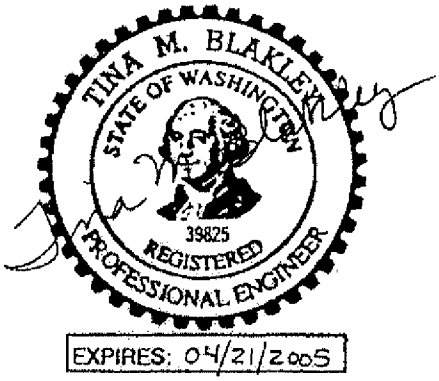
3/28/05

Co-Operator
T. E. Logan, President
Bechtel Hanford, Inc.

Date

CERTIFICATION OF CLOSURE OF THE
1325-N (116-N-3) TREATMENT, STORAGE, and DISPOSAL UNIT

As a registered professional engineer in the State of Washington, I certify that the 1325-N (116-N-3) treatment, storage, and disposal unit has been closed in accordance with the specifications contained in the closure plan. This certification is based on my understanding of the closure requirements and specifications, visits to the site to witness closure activity progress, discussions of closure progress with project staff who monitor daily activities and compliance with the approved closure plan, and review of the cleanup verification package, which documents that closure performance standards have been achieved. Further, my review activities and certification have been an independent activity in accordance with *Washington Administrative Code* 173-303-610(6).



March 16, 2005
Date

Tina M. Blakley, PE
State of Washington, License No. 39825
CH2M HILL, Inc.
3190 George Washington Way, Suite B
Richland, Washington 99352

Independent Registered Professional Engineer's
Closure Certification Report
for 1325-N (116-N-3)

Introduction

This report was prepared to document the independent closure certification activities performed by Tina Blakley of CH2M HILL, Inc.

The closure certification report addresses a single liquid waste disposal facility, known as the 1325-N (116-N-3) waste site, on the Hanford Site, which is a treatment, storage, and disposal unit. The closure of this unit is governed by three documents: 1) *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, (DOE-RL-2002); 2) *Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout* (SAP) (DOE-RL 2000), and 3) *Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-3 Trench, Crib, and 100-N-63:1 Pipeline* (BHI 2002).

Closure certification is required by *Washington Administrative Code* (WAC) 173-303-610(6).

Background

As described in the closure plan (DOE-RL 2002), the 1325-N (116-N-3) unit, herein referred to as 1325-N, received radiologically contaminated liquid effluent from the 100-N Reactor. The 1325-N Crib was constructed in 1983 and brought into operation in September 1985. The 1325-N Crib and Trench were covered with precast concrete panels. Discharges to the 1325-N Crib and Trench ceased in April 1991. The pipelines associated with effluent disposal to 1325-N are considered a part of the waste unit. Details of the operational background for the site are provided in DOE-RL (2002).

Closure of this unit commenced pursuant to WAC 173-303-610 and the Hanford Facility Dangerous Waste Permit (Ecology 1994)

Planned Closure Activities

Appendix A of DOE-RL (2002) presents the closure plan for 1325-N. The planned activities include removal of structures, piping, evaluation of soil data, waste management, and site restoration.

Closure Activities Completed

Based on site visits, review of the *Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-3 Trench, Crib, and 100-N-63:1 Pipeline* (BHI 2002) (CVP), and discussions with project staff, the following closure activities have been completed in accordance with the closure plan:

- **Removal of Structures.** Crib, trench, and piping structures, fencing fabric and pipe material from 100-N-63:1 (associated pipelines of 1325-N), wire cables, and concrete panels were removed during remediation of the site. Contaminated materials were size reduced and disposed at the Environmental Restoration Disposal Facility (ERDF). Fencing fabric was removed and set-aside for reuse. Uncontaminated fence posts were placed in the crib as fill, and uncontaminated concrete panels from the clean side of the trench, which were broken into rubble, were placed in the trench as fill, and was an approved activity by Ecology.

- **Evaluation of Soil Data.** A soil investigation conducted on the site in accordance with the closure plan (DOE-RL 2002) indicated that this site required soil remediation. In accordance with the closure plan a Sampling and Analysis Plan was developed for this site. Samples were collected and analyzed along the floor and sidewalls of the excavation. Ten shallow zone (i.e., less than 4.6 m [15 ft] depth) samples were randomly collected from each of the crib, trench, and pipeline excavation sidewalls. In addition, 10 deep zone (i.e., 4.6 [15 ft] or deeper) samples were randomly collected each from the floor of the crib and trench excavations; 10 overburden samples were collected stockpiled soil, and 12 transition zone samples were collected to identify the demarcation between contaminated and uncontaminated trench soils. As described in the CVP (BHI 2002) analysis and further evaluation of the contaminants showed that the closure plan performance standards were met through remediation.

- **Waste Management.** Demolition debris removed from 1325-N included solid wastes in the crib and trench, demolished concrete and wire cables, and pipe materials. This material was disposed as contaminated waste in the ERDF. Disposal waste manifests were reviewed as part of this certification process and show proper disposal of the waste in accordance with the closure plan.

- **Site Restoration.** Project personnel confirmed, by email that the backfill of the site is complete. This was verified by a site walkdown. Backfill consisted of grading the site to match the adjacent existing grade. The export water line remains unbackfilled, supported by clean cover panels (BHI 2001) Revegetation of the site will be completed in the future when weather conditions are more favorable for successful plant growth. Revegetation will consist of seeding the site with appropriate seed mix.

- **Cleanup Verification Package.** Tables 4, 5 and 6 of the CVP show that the sample results demonstrate closure performance standards, and applicable cleanup levels have been met.

Conclusion

Based on the review of the CVP, other project-related references, and site visits made by CH2M HILL personnel (see Attachment A), it is concluded that the closure of 1325-N was completed in accordance with the approved closure plan (DOE-RL 2002). The CVP concludes that the completed closure activities for 1325-N and 100-N-63:1 meet the soil closure performance standards and that the soils underlying these sites and the abandoned influent pipelines are verified to meet the cleanup levels and performance standards of the closure plan (DOE-RL 2002). The radiologically contaminated groundwater attributable to 1325-N remains above drinking water standards and is addressed through CERCLA in the 100-NR-1/100-NR-2 Operable Unit Record of Decision.

References

BHI, 2001, *Interoffice Memorandum*, "Approval to Leave Cover Panels in Place at 116-N-3 Trench", CCN 091239, Bechtel Hanford, Inc. Richland, Washington.

BHI, 2002, *Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-3 Trench, Crib, and 100-N-63:1 Pipeline*, CVP-2002-00002, Rev. 0, Bechtel Hanford, Inc. Richland, Washington.

DOE-RL, 2000, *Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout*, DOE/RL-2000-07, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-RL, 2002, *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, DOE/RL-96-39, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, 1994, *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*, August 1994, as amended, Washington State Department of Ecology, Olympia, Washington.

WAC-173-303, 1993, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

ATTACHMENT A
1325-N SUMMARY OF SITE VISITS CONDUCTED BY CH2M HILL PERSONNEL

March 15, 2001 – Plumes were located upstream of water line crossing at 1325-N. Plume also located on north and northwest sides of crib. Looking for funding for plume removal by Foster Wheeler. Native area south of trench may be involved. Expect resolution and possible removal by late summer 2001. Activities planned for summer months include removal of trough, plume and pipelines.

May 22, 2001 – Presently digging on south plume and processing trough.

August 27, 2001 (information provided via email, no site visit performed) – The trench excavation is complete and verification samples have been collected and are ready for submittal to the lab for analysis. The data is due back in late September. The crib still has active digging at plumes. The pipeline excavation is ongoing with no contamination outside pipe found to date.

September 5, 2001 – Additional plumes were identified in the crib area and the weir structure upstream is in process of being removed. No contamination has been found outside pipe found to date. The crib, trough and outlet structure to the trench have been completely removed. Plumes in that area are being excavated. Funding was provided for plume removal by Foster Wheeler Revision to the SAP is underway; currently with the regulators for review. Trench samples have been collected and are due back in October. No sampling for crib yet, since there are still plumes.

January 2, 2002 – There are still plumes near the crib on the south side. The pipe and box culvert to the north have been removed to the valve. The export water line is being supported across the trench by existing concrete panels. Small area of contamination located on north side of the lined pond. Waiting for subcontractor to evaluate how to remove it. All trench excavation has been completed.

June 19, 2002 – Crib remediation is complete. All samples have been collected and are at lab for analysis. Contamination found on north side of the pipelines has been associated with the N-1 project and will be remediated along with that trench.

September 18, 2002 – The perimeter fence has been removed. Fence fabric will be removed and posts will be placed as fill in trench. Plan is to backfill at the export water line supports to protect them, near the golf-ball for freeze protection, and at the steep slope near the open pit. No backfill is currently planned for the trench.

December 12, 2002 – No current activity at 1325-N during this site visit.

Note: Excavation activities were postponed for nearly a year and a half to allow for design modifications and rebidding of the work. Work started up again in August 2004.

January 5, 2005 – Backfill and re grading of 1325-N is complete. Subcontractor has issued as-built topography to the ERC. The export water line remains in place, supported by clean concrete cover panels. This portion of the trench remains unbackfilled. Bales of straw are staged at various locations in preparation for reseeding, planned to start in early 2005. Photos of completed site are attached.